

Developmental Biology

*An International Journal
Published under the Auspices of the
Society for Developmental Biology*

EDITOR-IN-CHIEF: Elizabeth D. Hay

ASSOCIATE EDITORS

Igor B. Dawid

Judson D. Sheridan

John W. Saunders, Jr.

Herbert Stern

Robin Wallace

ASSISTANT EDITOR: Mary J. Powers

FEATURE EDITORS

Eugene Bell

Francis J. Manasek

ADVISORY EDITOR

Mac V. Edds, Jr.

VOLUME 31, 1973



ACADEMIC PRESS
New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1973 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

Contents of Volume 31

NUMBER 1, MARCH 1973

Full Papers

ARTHUR W. SPIRA AND MARTIN J. HOLLENBERG. Human Retinal Development: Ultrastructure of the Inner Retinal Layers. 1

JACK G. CHAMBERLAIN. Analysis of Developing Ependymal and Choroidal Surfaces in Rat Brains Using Scanning Electron Microscopy. 22

ELMAR T. SCHMEISSER, D. MONA BAUMGARTEL, AND STEPHEN H. HOWELL. Gametic Differentiation in *Chlamydomonas Reinhardi*: Cell Cycle Dependency and Rates in Attainment of Mating Competency. 31

U. PETZOLDT, G. BRIEL, G. H. M. GOTTSCHIEWSKI, AND V. NEUHOFF. Free Amino Acids in the Early Cleavage States of the Rabbit Egg. 38

ULRICH CLEVER, INGRID CLEVER, INGRID STORBECK, AND NANCY L. YOUNG. The Apparent Requirement of two Hormones, α - and β -Ecdysone for Molting Induction in Insects. 47

GARY FREEMAN AND GEORGE T. REYNOLDS. The Development of Bioluminescence in the Ctenophore Mnemiopsis Leidyi. 61

PAUL MANDARON. Effects of α -Ecdysone, β -Ecdysone and Inokosterone on the *in Vitro* Evagination of Drosophila Leg Discs and the Subsequent Differentiation of Imaginal Integumentary Structures. 101

WILLIE M. REAMS, JR. AND STANLEY P. TOMPKINS. A Developmental Study of Murine Epidermal Langerhans Cells. 114

PETER B. KAUFMAN, J. DONALD LACROIX, P. DAYANANDAN, LAWRENCE F. ALLARD, JONATHAN J. ROSEN, AND WILBUR C. BIGELOW. Silicification of Developing Internodes in the Perennial Scouring Rush (*Esquisetum hyemale* var. affine.) 124

ELIZABETH S. BOYLAN, MICHAEL J. LAMARCA, AND ALLEN W. SCHUETZ. RNA Synthesis in the Ovary and Oocytes of the Starfish. 136

GERALD D. FISCHBACH AND STEPHEN A. COHEN. The Distribution of Acetylcholine Sensitivity over Uninnervated and Innervated Muscle Fibers Grown in Cell Culture. 147

SIEGFRIED W. DE LAAT, DANIEL LUCHTEL, AND JOHN G. BLUEMINK. The Action of Cytochalasin B during Egg Cleavage in *Xenopus Laevis*: Dependence on Cell Membrane Permeability. 163

Brief Notes

BEATRICE MINTZ AND JOHN D. GEARHART. Subnormal Zona Pellucida Change in Parthenogenetic Mouse Embryos. 178

ERNEST BOLLIN, JR., CURTIS A. CARLSON, AND KI-HAN KIM. Anuran Pancreas Development during Thyroxine-Induced Metamorphosis of *Rana catesbeiana*: RNA Metabolism during the Regressive Phase of Pancreas Development. 185

GAIL A. P. BRUNS AND VERNON M. INGRAM. Progenitor Cells of the Erythroid Series in the Chick Embryo. 192

BEATRICE MINTZ, JOHN D. GEARHART, AND AGNES O. GUYMONT. Phytohemagglutinin-Mediated Blastomere Aggregation and Development of Allophenic Mice..	195
---	-----

Review Article

YUTAKA SHIMADA AND DONALD A. FISCHMAN. Morphological and Physiological Evidence for the Development of Functional Neuromuscular Junctions <i>in Vitro</i> ..	200
--	-----

Features

News, Opinion and Letters.....	f-1
Current Literature.....	f-10
Editor's Index.....	f-15

NUMBER 2, APRIL

Full Papers

P. C. LEE. Developmental Changes of Adenosine Deaminase, Xanthine Oxidase, and Uricase in Mouse Tissues.....	227
RICHARD D. EWING. Cholinephosphotransferase Activity during Early Development of the Sea Urchin, <i>Arbacia punctulata</i>	234
RICHARD H. KESSIN. RNA Metabolism during Vegetative Growth and Morphogenesis of the Cellular Slime Mold <i>Dictyostelium discoideum</i>	242
H. TIMOURIAN, G. CLOTHIER, AND G. WATCHMAKER. Reaggregation of Sea Urchin Blastula Cells. I. Intrinsic Differences in the Blastula Cells.....	252
ANDRÉS J. JOBBÁGY AND ROBERT P. WAGNER. Changes in Enzyme Activity of Germinating Conidia of <i>Neurospora crassa</i>	264
KWANG W. JEON AND JOHN R. KENNEDY. The Primordial Germ Cells in Early Mouse Embryos: Light and Electron Microscopic Studies.....	275
H. H. HAGEDORN, ANN MARIE FALLON, AND HANS LAUFER. Vitellogenin Synthesis by the Fat Body of the Mosquito <i>Aedes aegypti</i> : Evidence for Transcriptional Control.....	285
L. KAGEN AND A. FREEDMAN. Embryonic Synthesis of Myoglobin <i>in Vivo</i> Estimated by Radioimmunoassay.....	295
T. G. CONNELLY, JOSÉ R. ORTIZ, AND TUNEO YAMADA. Influence of the Pituitary on Wolffian Lens Regeneration.....	301
DONNA L. DAENTL AND CHARLES J. EPSTEIN. Uridine Transport by Mouse Blastocysts.....	316
JEFFREY A. MACCABE, JOHN W. SAUNDERS, JR., AND MARILYN PICKETT. The Control of the Anteroposterior and Dorsoventral Axes in Embryonic Chick Limbs Constructed of Dissociated and Reaggregated Limb-Bud Mesoderm.....	323
RICHARD PHILLIPS AND JOHN G. TORREY. DNA Synthesis, Cell Division and Specific Cytodifferentiation in Cultured Pea Root Cortical Explants.....	336
MARCIA BRODY AND JAMES EDWARD WHITE. Environmental Regulation of Enzymes in the Microbodies and Mitochondria of Dark-Grown, Greening, and Light-Grown <i>Euglena Gracilis</i>	348
JULIE H. CHAMLEY, IAN GOLLER, AND GEOFFREY BURNSTOCK. Selective Growth of Sympathetic Nerve Fibers to Explants of Normally Densely Innervated Autonomic Effector Organs in Tissue Culture.....	362
MELVYN LIEBERMAN, FRANCIS J. MANASEK, TOHRU SAWANOBORI, AND EDWARD A. JOHNSON. Cytochalasin B: Its Morphological and Electrophysiological Actions on Synthetic Strands of Cardiac Muscle.....	380

Brief Notes

GERALD KARP, COLE MANES, AND WILLIAM E. HAHN. RNA Synthesis in the Pre-implantation Rabbit Embryo: Radioautographic Analysis.	404
DALIA SÖMJEN, A. M. KAYE, AND H. R. LINDNER. Postnatal Development of Uterine Response to Estradiol-17 β in the Rat.	409
KENNETH M. YAMADA AND NORMAN K. WESSELLS. Cytochalasin B: Effects on Membrane Ruffling, Growth Cone and Microspike Activity, and Microfilament Structure Not Due to Altered Glucose Transport.	413
ELLEN L. TAYLOR AND NORMAN K. WESSELLS. Cytochalasin B: Alterations in Salivary Gland Morphogenesis Not Due to Glucose Depletion.	421
AUTHOR INDEX.	426

Features:

News, Opinion, and Letters.	f-17
Current Literature.	f-21
Editor's Index.	f-24

Notice

Subject Index for Volume 31 will appear in the December 1973 issue as part of a cumulative index for the year 1973.

